

Summary of Essential Fish Habitat (EFH) and General Habitat Parameters for Federally Managed Species								
Species	Life Stage	Geographic Area	Temp (EC)	Salinity (‰)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
American plaice	Eggs	GOME, GB and estuaries from Passamaquoddy Bay to Saco Bay, ME and from Mass. Bay to Cape Cod Bay, MA	<12	(32)	30 - 90	All year in GOME Dec - June on GB Peaks April & May both	Surface waters	
	Larvae	GOME, GB, Southern NE and estuaries from Passamaquoddy Bay to Saco Bay, ME and from Mass Bay to Cape Cod Bay, MA	<14	(32)	30-130	Between January and August, with peaks in April and May	Surface Waters	
	Juveniles	GOME and estuaries from Passamaquoddy Bay to Saco Bay, ME and from Mass Bay to Cape Cod Bay, MA	<17	(32)	45-150		Bottom habitats with fine-grained sediments or substrate of sand or gravel	(Strong concentrations inside and around 100m isobath in Western GOME; Major Prey: echinoderms, arthropods, annelids)
	Adults	GOME, GB and estuaries from Passamaquoddy Bay to Saco Bay, ME and from Mass Bay to Cape Cod Bay, MA	<17	(34-20)	45-175		Bottom habitats with fine-grained sediments or a substrate of sand or gravel	
	Spawning Adults	GOME, GB and estuaries from Passamaquoddy Bay to Saco Bay, ME and from Mass Bay to Cape Cod Bay, MA	<14	(32)	<90	March through June	Bottom habitats of all substrate types	
Atlantic cod	Eggs	GOME, GB, eastern portion of continental shelf off southern NE and following estuaries: Englishman/ Machias Bay to Blue Hill Bay; Sheepscot R., Casco Bay, Saco Bay, Great Bay, Mass Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	<12	32 - 33 (10 - 35)	<110	Begins in fall, peaks in winter and spring	Surface Waters	
	Larvae	GOME, GB, eastern portion of continental shelf off southern NE and following estuaries: Passamaquoddy Bay to Penobscot Bay; Sheepscot R., Casco Bay, Saco Bay, Great Bay, Mass Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	<10	32 - 33	30-70	Spring	Pelagic waters	
	Juveniles	GOME, GB, eastern portion of continental shelf off southern NE and following estuaries: Passamaquoddy Bay to Saco Bay; Mass Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	<20	30 - 35	25 - 75		Bottom habitats with a substrate of cobble or gravel	HAPC - An area approximate of 300sq. nautical miles along the northern edge of GB and the Hague line containing gravel cobble substrate.
	Adults	GOME, GB, southern NE, middle Atlantic south to Delaware Bay and following estuaries: Passamaquoddy Bay to Saco Bay; Mass Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	<10	(29 - 34)	10-150		Bottom habitats with a substrate of rocks, pebbles, or gravel	(Major prey: fish crustaceans, decapods, amphipods)

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	Spawning Adults	GOME, GB, southern NE, middle Atlantic south to Delaware Bay and following estuaries: Englishman/ Machias Bay to Blue Hill Bay; Sheepscot R., Mass Bay, Boston Harbor, Cape Cod Bay, MA	<10	(10 - 35)	10-150	spawn during fall, winter, and early spring	Bottom habitats with a substrate of smooth sand, rocks, pebbles, or gravel	
Atlantic halibut	Eggs	GOME, GB	4 - 7	<35	<700	Between late fall and early spring, peak Nov and Dec.	Pelagic waters to the sea floor	
	Larvae	GOME, GB		30 - 35			Surface waters	
	Juveniles	GOME, GB	>2		20 - 60		Bottom habitats with a substrate of sand, gravel, or clay	
	Adults	GOME, GB	<13.6	30.4-35.3	100-700		Bottom habitats with a substrate of sand, gravel, or clay	(Major prey: crustaceans, fish, cod, squid)
	Spawning Adults	GOME, GB	<7	<35	<700	Between late fall and early spring, peaks in Nov. and Dec.	Bottom habitats with a substrate of soft mud, clay, sand, or gravel; rough or rocky bottom locations along slopes of the outer banks	
Atlantic herring	Eggs	GOME, GB and following estuaries: Englishman/ Machias Bay, Casco Bay,& Cape Cod Bay	<15	32 - 33	20 - 80	July through November	Bottom habitats with a substrate of gravel, sand, cobble, shell fragments & aquatic macrophytes. .	Eggs adhere to bottom forming extensive beds. Eggs most often found in areas of well-mixed water, with tidal currents between 1.5 and 3.0 knots (Egg beds can range from 4500 to 10,000 Km² on GB. Eggs susceptible to suffocation from high densities and siltation)
	Larvae	GOME, GB, Southern NE and following estuaries: Passamaquoddy Bay to Cape Cod Bay, Narragansett Bay, & Hudson R./ Raritan Bay	<16	32	50 - 90	Between August and April, peaks from Sept. - Nov.	Pelagic waters	
	Juveniles	GOME, GB, Southern NE and Middle Atlantic south to Cape Hatteras and following estuaries: Passamaquoddy Bay to Cape Cod Bay; Buzzards Bay to Long Island Sound; Gardiners Bay to Delaware Bay	<10	26 - 32	15-135		Pelagic waters and bottom habitats	
	Adults	GOME, GB, southern NE and middle Atlantic south to Cape Hatteras and following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Cape Cod Bay; Buzzards Bay to Long Island Sound; Gardiners Bay to Delaware Bay; & Chesapeake Bay	<10	>28	20-130		Pelagic waters and bottom habitats	(major prey: zooplankton)
	Spawning Adults	GOME, GB, southern NE and middle Atlantic south to Delaware Bay and Englishman/ Machias Bay Estuary	<15	32 - 33	20 - 80	July through November	Bottom habitats with a substrate of gravel, sand, cobble and shell fragments, also on aquatic macrophytes	Herring eggs are spawned in areas of well-mixed water, with tidal currents between 1.5 and 3.0 knots

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Atlantic salmon	Eggs	Rivers from CT to Maine: Connecticut, Pawcatuck, Merrimack, Coheco, Saco, Androscoggin, Presumpscot, Kennebec, Sheepscot, Ducktrap, Union, Penobscot, Narraguagus, Machias, East Machias, Pleasant, St. Croix, Denny's, Passagassawaukeag Aroostook, Lamprey, Boyden, Orland Rivers, and the Turk, Hobart & Patten Streams; and the following estuaries for juveniles and adults: Passamaquoddy Bay to Muscongus Bay; Casco Bay to Wells Harbor; Mass Bay, Long Island Sound, Gardiners Bay to Great South Bay.	<10	Fresh water	30-31 cm	Between October and April	Bottom habitats with a gravel or cobble riffle (redd) above or below a pool in rivers	need clean well-oxygenated freshwater
	Larvae		<10	Fresh water		Between March and June for alevins/fry	Bottom habitats with a gravel or cobble riffle (redd) above or below a pool in rivers	
	Juveniles		<25	Fresh water to Oceanic	10- 61 cm		Bottom habitats of shallow gravel/cobble riffles interspersed with deeper riffles and pools in rivers and estuaries Water velocities between 30 - 92cm/sec	As they grow, parr transform into smolts. Atlantic salmon smolts require access downstream to the ocean. Upon entering the ocean, post-smolts become pelagic and range from Long Island Sound north to the Labrador Sea.
	Adults		<22.8	Fresh water to Oceanic			Oceanic adult Atlantic salmon are primarily pelagic and range from waters of the continental shelf off southern NE north throughout the GOME Dissolved oxygen above 5ppm for migratory pathway.	HAPC - Eleven rivers in Maine includes: St. Croix, Denny's, East Machias, Machias, Pleasant, Turk stream, Narraguagus, Penobscot, Ducktrap, Sheepscot, and Kennebec River.
	Spawning Adults		<10	Fresh water	30- 61 cm	October and November	Bottom habitats with a gravel or cobble riffle (redd) above or below a pool in rivers	Water velocity around 61cm per second
Atlantic sea scallop	Eggs	GOME, GB, southern NE and middle Atlantic south to Virginia-North Carolina border and following estuaries: Passamaquoddy Bay to Sheepscot R.; Casco Bay, Mass Bay, and Cape Cod Bay	<17			May through October Peaks in May and June in middle Atlantic area, and in Sept. and Oct. on GB and GOME	Bottom habitats	Eggs remain on sea floor until they develop into the first free-swimming larval stage.
	Larvae	GOME, GB, southern NE and middle Atlantic south to Virginia-North Carolina border and following estuaries: Passamaquoddy Bay to Sheepscot R.; Casco Bay, Mass Bay, and Cape Cod Bay	<18	16.9 - 30			Pelagic waters and bottom habitats with a substrate of gravelly sand, shell fragments, pebbles, or on various red algae, hydroids, amphipod tubes and bryozoans	
	Juveniles	GOME, GB, southern NE and middle Atlantic south to Virginia-North Carolina border and following estuaries: Passamaquoddy Bay to Sheepscot R.; Casco Bay, Great Bay, Mass Bay, and Cape Cod Bay	<15		18-110		Bottom habitats with a substrate of cobble, shells, and silt	(prey: filter feeders on phytoplankton; preferred substrates are associated with low concentrations of inorganics for optimal feeding)
	Adults	GOME, GB, southern NE and middle Atlantic south to Virginia-North Carolina border and following estuaries: Passamaquoddy Bay to Sheepscot R.; Casco Bay, Great Bay, Mass Bay, and Cape Cod Bay	<21	>16.5	18-110		Bottom habitats with a substrate of cobble, shells, coarse/gravelly sand, and sand	

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	Spawning Adults	GOME, GB, southern NE and middle Atlantic south to Virginia-North Carolina border and following estuaries: Passamaquoddy Bay to Sheepscot R.; Casco Bay, Mass Bay, and Cape Cod Bay	<16	>16.5	18-110	May through October, peaks in May and June in middle Atlantic area, and in Sept. and Oct. on GB and in GOME	Bottom habitats with a substrate of cobble, shells, coarse/gravelly sand, and sand	
Haddock	Eggs	GB southwest to Nantucket Shoals and coastal areas of GOME and the following estuaries: Great Bay, Mass Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	<10	34 - 36	50 - 90	March to May, peak in April	Surface waters	
	Larvae	GB southwest to the middle Atlantic south to Delaware Bay and the following estuaries: Great Bay, Mass Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay, and Narragansett Bay	<14	34 - 36	30 - 90	January to July, peak in April and May	Surface waters	
	Juveniles	GB, GOME, middle Atlantic south to Delaware Bay	<11	31.5 - 34	35-100		Bottom habitats with a substrate of pebble gravel	
	Adults	GB and eastern side of Nantucket Shoals, throughout GOME, *additional area of Nantucket Shoals, and Great South Channel	<7	31.5 - 35	40-150		Bottom habitats with a substrate of broken ground, pebbles, smooth hard sand, and smooth areas between rocky patches	*additional area more accurately reflects historic patterns of distribution and abundance
	Spawning Adults	GB, Nantucket Shoals, Great South Channel, throughout GOME	<6	31.5 - 34	40-150	January to June	Bottom habitats with a substrate of pebble gravel or gravelly sand	
Monkfish (Goose-fish)	Eggs	GOME, GB, southern NE, middle Atlantic south to Cape Hatteras, North Carolina	<18		15- 1000	March to September	Surface waters	(eggs contained in long mucus veils that float near or at the surface)
	Larvae	GOME, GB, southern NE, middle Atlantic south to Cape Hatteras, North Carolina	15		25-1000	March to September	Pelagic waters	
	Juveniles	Outer continental shelf in the middle Atlantic, mid-shelf off southern NE, all areas of GOME	<13	29.9-36.7	25-200		Bottom habitats with substrates of a sand-shell mix, algae covered rocks, hard sand, pebbly gravel, or mud	
	Adults	Outer continental shelf in the middle Atlantic, mid-shelf off southern NE, outer perimeter of GB, all areas of GOME	<15	29.9-36.7	25-200		Bottom habitats with substrates of a sand-shell mix, algae covered rocks, hard sand, pebbly gravel, or mud	(Major prey: fish, shrimp, squid, crustaceans, mollusks)
	Spawning Adults	Outer continental shelf in the middle Atlantic, mid-shelf off southern NE, outer perimeter of GB, all areas of GOME	<13	29.9-36.7	25-200	February to August	Bottom habitats with substrates of a sand-shell mix, algae covered rocks, hard sand, pebbly gravel, or mud	
Ocean pout	Eggs	GOME, GB, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay; Mass Bay and Cape Cod Bay	<10	32-34	<50	Late fall and winter	Bottom habitats, generally hard bottom sheltered nests, holes, or crevices where they are guarded by parents	(eggs are laid in gelatinous masses and take 2-3 months to develop)

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	Larvae	GOME, GB, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay; Mass Bay and Cape Cod Bay	<10	>25	<50	Late fall to spring	Bottom habitats in close proximity to hard bottom nesting areas	
	Juveniles	GOME, GB, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay; Mass Bay, Boston Harbor and Cape Cod Bay	<14	>25	<80		Bottom habitats, often smooth bottom near rocks or algae	
	Adults	GOME, GB, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay; Mass Bay, Boston Harbor and Cape Cod Bay	<15	32 - 34	<110		Bottom habitats. (Dig depressions in soft sediments which are then used by other species)	(major prey: mollusks, crustaceans, echinoderms, sand dollars)
	Spawning Adults	GOME, GB, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay; Mass Bay, and Cape Cod Bay	<10	32 - 34	<50	Late summer to early winter, peaks in Sept. and October	Bottom habitats with a hard bottom substrate, including artificial reefs and shipwrecks	(internal fertilization)
Offshore hake	Eggs	Outer continental shelf of GB and southern NE south to Cape Hatteras, North Carolina	<20		<1250	Observed all year and primarily collected at depths from 110 - 270m	Pelagic waters	
	Larvae	Outer continental shelf of GB and southern NE south to Chesapeake Bay	<19		<1250	Observed all year and primarily collected at depths from 70 - 130m	Pelagic waters	
	Juveniles	Outer continental shelf of GB and southern NE south to Cape Hatteras, NC	<12		170- 350		Bottom habitats	
	Adults	Outer continental shelf of GB and southern NE south to Cape Hatteras, NC	<12		150 - 380		Bottom habitats	(major prey: fish - cannibalistic, shrimp, other crustaceans)
	Spawning Adults	Outer continental shelf of GB and southern NE south to the Middle Atlantic Bight	<12		330 - 550	Spawn all throughout the year	Bottom habitats	
Pollock	Eggs	GOME, GB and the following estuaries: Great Bay to Boston Harbor	<17	32 - 32.8	30-270	October to June, peaks in November to February	Pelagic waters	
	Larvae	GOME, GB and the following estuaries: Passamaquoddy Bay, Sheepscot R., Great Bay to Cape Cod Bay	<17		10-250	September to July, peaks from Dec. to February	Pelagic waters	(migrate inshore as they grow)
	Juveniles	GOME, GB and the following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay to Waquoit Bay; Long Island Sound, Great South Bay	<18	29 - 32	0 - 250		Bottom habitats with aquatic vegetation or a substrate of sand, mud or rocks	(Intertidal zone may be important nursery area. Juveniles present in shallow intertidal zone at all tide stages throughout summer. Subtidal marsh creeks such as Little Egg Harbor, NJ are also seasonally important as nursery)

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	Adults	GOME, GB, southern NE, and middle Atlantic south to New Jersey and the following estuaries: Passamaquoddy Bay, Damariscotta R., Mass Bay, Cape Cod Bay, Long Island Sound	<14	31 - 34	15-365		Hard bottom habitats including artificial reefs	(major prey: crustaceans, fish, mollusks)
	Spawning Adults	GOME, southern NE, and middle Atlantic south to New Jersey includes Mass Bay	<8	32 - 32.8	15-365	September to April, peaks December to February	Bottom habitats with a substrate of hard, stony, or rocky bottom includes artificial reefs	
Red hake	Eggs	GOME, GB, continental shelf off southern NE, and middle Atlantic south to Cape Hatteras	<10	< 25		May to November, peaks in June and July	Surface waters of inner continental shelf	
	Larvae	GOME, GB, continental shelf off southern NE, and middle Atlantic south to Cape Hatteras and following estuaries: Sheepscot R., Mass Bay to Cape Cod Bay; Buzzards Bay, Narragansett Bay & Hudson R./ Raritan Bay	<19	>0.5	<200	May to December, peaks in Sept. and October	Surface waters	(newly settled larvae need shelter, including live sea scallops, also use floating or mid-water objects for shelter)
	Juveniles	GOME, GB, continental shelf off southern NE, and middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay, Mass Bay to Cape Cod Bay; Buzzards Bay to Conn. R.; Hudson R./ Raritan Bay, & Chesapeake Bay	<16	31 - 33	<100		Bottom habitats with substrate of shell fragments, including areas with an abundance of live scallops	
	Adults	GOME, GB, continental shelf off southern NE, and middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay, Mass Bay to Cape Cod Bay; Buzzards Bay to Conn. R.; Hudson R./ Raritan, Delaware Bay, & Chesapeake Bay	<12	33 - 34	10-130		Bottom habitats in depressions with a substrate of sand and mud	(major prey: fish and crustaceans)
	Spawning Adults	GOME, southern edge of GB, continental shelf off southern NE, and middle Atlantic south to Cape Hatteras and following estuaries: Sheepscott R., Mass Bay, Cape Cod Bay, Buzzards Bay, & Narragansett Bay	<10	>25	<100	May to November, peaks in June and July	Bottom habitats in depressions with a substrate of sand and mud	
Redfish	Eggs	No EFH identification or description for this life history stage						Redfish are ovoviviparous (live bearers)
	Larvae	GOME, southern GB	<15		50-270	March to October, peak in August	Pelagic waters	
	Juveniles	GOME, southern edge of GB	<13	31 - 34	25-400		Bottom habitats with a substrate of silt, mud, or hard bottom	
	Adults	GOME, southern edge of GB	<13	31 - 34	50-350		Bottom habitats with a substrate of silt, mud, or hard bottom	
	Spawning Adults	GOME, southern edge of GB	<13	31 - 34	5 -350	April to August	Bottom habitats with a substrate of silt, mud, or hard bottom	copulation occurs between Oct-Jan. Fertilization is delayed until Feb-Apr

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White hake	Eggs	GOME, GB, southern NE and the following estuaries: Great Bay to Cape Cod Bay				August to September	Surface waters	
	Larvae	GOME, southern edge of GB, southern NE to middle Atlantic and the following estuaries: Mass Bay, to Cape Cod Bay				May - mid-Atlantic area Aug. & Sept. - GOME, GB area	Pelagic waters	
	Juveniles	GOME, southern edge of GB, southern NE to middle Atlantic and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Cape Cod Bay	<19		5 - 225	May-Sep - pelagic	Pelagic stage - pelagic waters; Dermersal stage - Bottom habitat with seagrass beds or substrate of mud or fine-grained sand	
	Adults	GOME, southern edge of GB, southern NE to middle Atlantic and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Cape Cod Bay	<14		5 - 325		Bottom habitats with substrate of mud or fine-grained sand	(major prey: small fish, shrimp and other crustaceans)
	Spawning Adults	GOME, southern edge of GB, southern NE to middle Atlantic	<14		5 - 325	April to May - southern part of range; August - Sept.- northern part of range	Bottom habitats with substrate of mud or fine-grained sand in deep water.	
Whiting (Silver hake)	Eggs	GOME, GB, continental shelf off southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Merrimack R. to Cape Cod Bay	<20		50-150	All year, peaks June to October	Surface waters	
	Larvae	GOME, GB, continental shelf off southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Mass Bay to Cape Cod Bay	<20		50-130	All year, peaks July to September	Surface waters	
	Juveniles	GOME, GB, continental shelf off southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Casco Bay, Mass Bay to Cape Cod Bay	<21	>20	20-270		Bottom habitats of all substrate types	
	Adults	GOME, GB, continental shelf off southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Casco Bay, Mass Bay to Cape Cod Bay	<22		30-325		Bottom habitats of all substrate types	
	Spawning Adults	GOME, GB, continental shelf off southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Mass Bay and Cape Cod Bay	<13		30-325		Bottom habitats of all substrate types	
Window-pane flounder	Eggs	GOME, GB, southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Delaware Inland Bays	<20		<70	February to November, peaks May and October in middle Atlantic July - August on GB	Surface waters	

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	Larvae	GOME, GB, southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Delaware Inland Bays	<20		<70	February to November, peaks May and October in middle Atlantic July - August on GB	Pelagic waters	
	Juveniles	GOME, GB, southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Chesapeake Bay	<25	5.5 - 36	1 - 100		Bottom habitats with substrate of mud or fine grained sand	
	Adults	GOME, GB, southern NE, middle Atlantic south to Virginia - NC border and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Chesapeake Bay	<26.8	5.5 - 36	1 - 75		Bottom habitats with substrate of mud or fine grained sand	(major prey: polychaetes, small crustaceans, mysids, small fish)
	Spawning Adults	GOME, GB, southern NE, middle Atlantic south to Virginia -NC border and the following estuaries: Passamaquoddy Bay to Great Bay; Mass Bay to Delaware Inland Bays	<21	5.5 - 36	1 - 75	February - December, peak in May in middle Atlantic	Bottom habitats with substrate of mud or fine grained sand	
Winter flounder	Eggs	GB, inshore areas of GOME, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Delaware Inland Bays	<10	10 - 30	<5	February to June, peak in April on GB	Bottom habitats with a substrate of sand, muddy sand, mud, and gravel	* On GB, eggs are generally found in water temp < 8EC, and < 90m deep.
	Larvae	GB, inshore areas of GOME, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Delaware Inland Bays	<15	4 - 30	<6	March to July, peaks in April and May on GB	Pelagic and bottom waters	* On GB, larvae are generally found in water temp < 8EC, and < 90m deep.
	Juveniles (age 1+)	GB, inshore areas of GOME, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Chincoteague Bay	<25	10 - 30	1 - 50		Bottom habitats with a substrate of mud or fine grained sand	* Young-of-year exist where water temp <28, depths 0.1 - 10m, salinities 5 - 33 (major prey: amphipods, copepods, polychaetes, bivalve siphons)
	Adults	GB, inshore areas of GOME, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Chincoteague Bay	<25	15 - 33	1 - 100		Bottom habitats including estuaries with substrate of mud, sand, gravel	(major prey: amphipods, polychaetes, bivalve siphons, crustaceans)
	Spawning Adults	GB, inshore areas of GOME, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Delaware Inland Bays	<15	5.5 - 36	<6*	February to June	Bottom habitats including estuaries with substrate of mud, sand, gravel	*except on GB where they spawn as deep as 80m
Witch flounder	Eggs	GOME, GB, continental shelf off southern NE, middle Atlantic south to Cape Hatteras	<13	High	Deep	March to October	Surface waters	
	Larvae	GOME, GB, continental shelf off southern NE, middle Atlantic south to Cape Hatteras	<13	High	Deep	March to November, peaks in May - July	Surface waters to 250m	

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	Juveniles	GOME, outer continental shelf from GB south to Cape Hatteras	<13	34 - 36	50-450 to 1500m		Bottom habitats with fine-grained substrate	(the upper slope is nursery area; major prey: crustaceans, polychaetes, mollusks)
	Adults	GOME, outer continental shelf from GB south to Chesapeake Bay	<13	32 - 36	25-300		Bottom habitats with fine-grained substrate	(major prey: polychaetes, echinoderms, crustaceans, mollusks, squid)
	Spawning Adults	GOME, outer continental shelf from GB south to Chesapeake Bay	<15	32 - 36	25-360	March to November, peaks in May-August	Bottom habitats with fine-grained substrate	
Yellowtail flounder	Eggs	GB, Mass Bay, Cape Cod Bay, southern NE continental shelf south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay to Cape Cod Bay	<15	32.4 - 33.5	30 - 90	Mid-March to July, peaks in April to June in southern NE	Surface waters	
	Larvae	GB, Mass Bay, Cape Cod Bay, southern NE continental shelf, middle Atlantic south to Chesapeake Bay and the following estuaries: Passamaquoddy Bay to Cape Cod Bay	<17	32.4 - 33.5	10 - 90	March to April in New York bight; May to July in south NE and southeastern GB	Surface waters	(largely an oceanic nursery)
	Juveniles	GB, GOME, southern NE continental shelf south to Delaware Bay and the following estuaries: Sheepscot R., Casco Bay, Mass Bay to Cape Cod Bay	<15	32.4 - 33.5	20 - 50		Bottom habitats with substrate of sand or sand and mud	
	Adults	GB, GOME, southern NE continental shelf south to Delaware Bay and the following estuaries: Sheepscot R., Casco Bay, Mass Bay to Cape Cod Bay	<15	32.4 - 33.5	20 - 50		Bottom habitats with substrate of sand or sand and mud	(major prey: annelids, arthropods, mollusks)
	Spawning Adults	GB, GOME, southern NE continental shelf south to Delaware Bay and the following estuaries: Mass Bay to Cape Cod Bay	<17	32.4 - 33.5	10-125		Bottom habitats with substrate of sand or sand and mud	
Atlantic mackerel	Eggs	Continental Shelf from Maine through Cape Hatteras, NC also includes estuaries from Great Bay to Cape Cod Bay; Buzzards Bay to Long Island Sound; Gardiners Bay and Great South Bay	5-23	(18 - >30)	0 - 15		Pelagic waters	(peak spawning in salinities >30ppt)
	Larvae	Continental Shelf from GOME through Cape Hatteras, NC also includes estuaries from Great Bay to Cape Cod Bay; Narragansett Bay to Long Island Sound; Gardiners Bay and Great South Bay	6-22	(>30)	10-130		Pelagic waters	
	Juveniles	Continental Shelf from GOME through Cape Hatteras, NC also includes estuaries from Passamaquoddy Bay; Penobscot Bay to Saco Bay; Great Bay; Mass Bay to Cape Cod Bay; Narragansett Bay, Long Island Bay; Gardiners Bay to Hudson R./ Raritan Bay	4 - 22	(>25)	0 - 320		Pelagic waters	

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (‰)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
	Adults	Continental Shelf from GOME through Cape Hatteras, NC also includes estuaries from Passamaquoddy Bay to Saco Bay; Mass Bay to Long Island Bay; Gardiners Bay to Hudson R./ Raritan Bay	4 - 16	(>25)	0 - 380		Pelagic waters	(opportunistic feeding: can filter feed or select individual prey. Major prey: crustaceans, pelagic mullosks, polychaetes, squid, fish)
Black sea bass	Eggs	Continental Shelf and estuaries from southern NE to North Carolina, also includes Buzzards Bay			0 - 200	May to October	Water column of coastal Mid-Atlantic Bight and Buzzards Bay	
	Larvae	Pelagic waters over Continental Shelf from GOME to Cape Hatteras, NC, also includes Buzzards Bay	(11- 26)	(30 - 35)	(<100)	(May - Nov, peak Jun - Jul)	Habitats for transforming (to juveniles) larvae are near coastal areas and into marine parts of estuaries between Virginia and NY. When larvae become demersal, found on structured inshore habitat such as sponge beds.	
	Juveniles	Demersal waters over Continental Shelf from GOME to Cape Hatteras, NC, also includes estuaries from Buzzards Bay to Long Island Sound; Gardiners Bay, Barnegat Bay to Chesapeake Bay; Tangier/ Pocomoke Sound and James River	>6	>18	(1 - 38)	Found in coastal areas (Apr - Dec , peak Jun - Nov) between VA and MA, but winter offshore from NJ and south; Estuaries in summer and spring	Rough bottom, shellfish and eelgrass beds, man-made structures in sandy-shelly areas, offshore clam beds and shell patches may be used during wintering	(YOY use salt marsh edges and channels; high habitat fidelity)
	Adults	Demersal waters over Continental Shelf from GOME to Cape Hatteras, NC, also includes estuaries: Buzzards Bay, Narragansett Bay, Gardiners Bay, Great South Bay, Barnegat Bay to Chesapeake Bay; Tangier/ Pocomoke Sound and James River	>6	(>20)	(20- 50)	Wintering adults (Nov. to April) offshore, south of NY to NC Inshore, estuaries from May to October	Structured habitats (natural & man-made) sand and shell substrates preferred	(spawn in coastal bays but not estuaries; change sex to males with growth; prey: benthic and near bottom inverts, small fish, squid)
Bluefish	Eggs	North of Cape Hatteras, found over Continental Shelf from Montauk Point, NY south to Cape Hatteras, South of Cape Hatteras, found over Continental Shelf through Key West, Florida	>18	>31ppt	Mid-shelf depths	April to August	Pelagic waters	*No EFH designation inshore
	Larvae	North of Cape Hatteras, found over Continental Shelf from Montauk Point, NY south to Cape Hatteras, South of Cape Hatteras, found over Continental Shelf through Key West, Florida, the slope sea and Gulf Stream between latitudes 29N and 40N; includes the following estuaries: Narragansett Bay	>18	>30ppt	>15	April to September	Pelagic waters	No EFH designation inshore for larvae

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (‰)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
	Juveniles	North of Cape Hatteras, found over Continental Shelf from Nantucket Island, MA south to Cape Hatteras, South of Cape Hatteras, found over Continental Shelf through Key West, Florida, the slope sea and Gulf Stream between latitudes 29N and 40N also includes estuaries between Penobscot Bay to Great Bay; Mass Bay to James R.; Albemarle Sound to St. Johns River, FL	(19-24)	(23 - 36) freshwater zone in Albemarle Sound		North Atlantic estuaries from June to October Mid-Atlantic estuaries from May to October South Atlantic estuaries from March to December	Pelagic waters	(use estuaries as nursery areas; can intrude into areas with salinities as low as 3 ppt)
	Adults	North of Cape Hatteras, found over Continental Shelf from Cape Cod Bay, MA south to Cape Hatteras, South of Cape Hatteras, found over Continental Shelf through Key West, Florida also includes estuaries between Penobscot Bay to Great Bay; Mass Bay to James R.; Albemarle Sound to Pamlico/ Pungo R., Bouogue Sound, Cape Fear R., St. Helena Sound, Broad R., St. Johns R., & Indian R.	(14-16)	>25ppt		North Atlantic estuaries from June to October Mid-Atlantic estuaries from April to October South Atlantic estuaries from May to January	Pelagic waters	Highly migratory (major prey: fish)
Butterfish	Eggs	Over Continental shelf from GOME through Cape Hatteras, NC, also in estuaries from Mass Bay to Long Island Sound; Gardiners Bay, Great South Bay, and Chesapeake Bay	11 - 17	(25 - 33)	0-1829	(spring and summer)	Pelagic waters	
	Larvae	Over Continental shelf from GOME through Cape Hatteras, NC, also in estuaries from Boston Harbor, Waquoit Bay to Long Island Sound; Gardiners Bay to Hudson R./ Raritan Bay; Delaware Bay and Chesapeake Bay	9 - 19	(6.4 - 37)	10-1829	(summer and fall)	Pelagic waters	
	Juveniles	Over Continental shelf from GOME through Cape Hatteras, NC also in estuaries from Mass Bay, Cape Cod Bay to Delaware Inland Bays; Chesapeake Bay, York R. and James R.	3 - 28	(3 - 37)	10-365 (most <120)	(winter - shelf spring to fall - estuaries)	Pelagic waters (larger individuals found over sandy and muddy substrates)	(pelagic schooling - smaller individuals associated with floating objects including jellyfish)
	Adults	Over Continental shelf from GOME through Cape Hatteras, NC, also in estuaries from Mass Bay, Cape Cod Bay to Hudson R./ Raritan Bay; Delaware Bay and Inland Bays; York R. and James R.	3 - 28	(4 - 26)	10-365 (most <120)	(winter - shelf summer to fall - estuaries)	Pelagic waters (schools form over sandy, sandy-silt and muddy substrates)	(common in inshore areas and surf zone; prey: planktonic, thaliacians, squid, copepods)
Illex squid	Juveniles	Over Continental shelf from GOME through Cape Hatteras, NC	2 -23		0 - 182	(carried northward by Gulf Stream)	Pelagic waters	
	Adults	Over Continental shelf from GOME through Cape Hatteras, NC	4 - 19		0 -182	(late fall - offshore, spawn Dec- Mar)	Pelagic waters	(prey: fish, crustaceans, squid; die after spawning)
Loligo	Eggs***	Over Continental shelf from GOME through Cape Hatteras, NC	(>8)	(30 - 32)	(<50)	(May - spawned, hatch in Jul)	(Demersal egg masses are commonly found on sandy/mud bottom, usually attached to rocks/boulders, pilings or algae such as fucus, ulva, laminaria, porphyra)	*** EFH is not currently designated for this life stage (Eggs are demersal, enclosed in gelatinous capsule containing up to 200 eggs. Laid in masses of hundreds of capsules from different females)

Species	Life Stage	Geographic Area	Temp (EC)	Salinity (‰)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
	Juveniles	Over Continental shelf from GOME through Cape Hatteras, NC	4 - 27	(31 - 34)	0 - 213	spring - fall - inshore winter - offshore	Pelagic waters	(inhabit upper 10m at depth of 50 - 100m on continental shelf)
	Adults	Over Continental shelf from GOME through Cape Hatteras, NC	4 - 28		0 - 305	(Mar - Oct - inshore; winter - offshore)	Pelagic waters	(prey: fish, crustaceans)
Ocean quahog	Juveniles	Eastern edge of GB and GOME throughout the Atlantic EEZ	<18	(>25)	8-245		Throughout substrate to a depth of 3ft within federal waters, occurs progressively further offshore between Cape Cod and Cape Hatteras	(medium to fine grained sands, sandy mud, silty sand)
	Adults	Eastern edge of GB and GOME throughout the Atlantic EEZ	<18	(>25)	8 -245	(spawn May-Dec with several peaks)	Throughout substrate to a depth of 3ft within federal waters, occurs progressively further offshore between Cape Cod and Cape Hatteras	(medium to fine grained sands, sandy mud, silty sand; earliest age of maturity 7 yrs, avg 13 yrs; suspension feeders on phytoplankton)
Scup	Eggs	Southern NE to coastal Virginia includes the following estuaries: Waquoit Bay to Long Island Sound; Gardiners Bay, Hudson R./ Raritan Bay	13 - 23	>15	(<30)	May - August	Pelagic waters in estuaries	
	Larvae	Southern NE to coastal Virginia includes the following estuaries: Waquoit Bay to Long Island Sound; Gardiners Bay, Hudson R./ Raritan Bay	13 - 23	>15	(<20)	May - September	Pelagic waters in estuaries	
	Juveniles	The Continental Shelf from GOME to Cape Hatteras, NC includes the following estuaries: Mass Bay, Cape Cod Bay to Long Island Sound; Gardiners Bay to Delaware Inland Bays; & Chesapeake Bay	>7	>15	(0 - 38)	Spring and summer in estuaries and bays	Dermersal waters north of Cape Hatteras and Inshore on various sands, mud, mussel, and eelgrass bed type substrates	
	Adults	The Continental Shelf from GOME to Cape Hatteras, NC includes the following estuaries: Cape Cod Bay to Long Island Sound; Gardiners Bay to Hudson R./ Raritan Bay; Delaware Bay & Inland Bays; & Chesapeake Bay	>7	>15	(2 -185)	Wintering adults (November - April) are usually offshore, south of NY to NC	Dermersal waters north of Cape Hatteras and Inshore estuaries (various substrate types)	(spawn < 30m during inshore migration - May - Aug; prey: small benthic inverts)
Spiny Dogfish	Juveniles	GOME through Cape Hatteras, NC across the Continental Shelf; Continental Shelf waters South of Cape Hatteras, NC through Florida; also includes estuaries from Passamaquaddy Bay to Saco Bay; Mass Bay & Cape Cod Bay	3 - 28		10-390		Continental Shelf waters and estuaries	
	Adults	GOME through Cape Hatteras, NC across the Continental Shelf;Continental Shelf waters South of Cape Hatteras, NC through Florida; also includes estuaries from Passamaquaddy Bay to Saco Bay; Mass Bay & Cape Cod Bay	3 - 28	(30 - 32)	10-450		Continental Shelf waters and estuaries	(major prey: crabs, eels, small fish)

Species	Life Stage	Geographic Area	Temp (°C)	Salinity (‰)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
Summer flounder	Eggs	Over Continental Shelf from GOME to Cape Hatteras, NC; South of Cape Hatteras to Florida			30-70 fall; 110 winter; 9-30 spring	October to May	Pelagic waters , heaviest concentrations within 9miles of shore off NJ and NY	
	Larvae	Over Continental Shelf from GOME to Cape Hatteras, NC; South of Cape Hatteras to Florida; also includes estuaries from Waquoit Bay to Narragansett Bay; Hudson River/ Raritan Bay; Barnegat Bay, Chesapeake Bay, Rappahannock R., York R., James R., Albemarie Sound, Pamlico Sound, Neuse R. to Indian R.	(9 - 12)	(23-33) Fresh in Hudson R. Raritan Bay area	10-70	mid-Atlantic Bight from Sept. to Feb.; Southern part from Nov. to May at depths 9-30m	Pelagic waters, larvae most abundant 19 - 83km from shore; Southern areas 12 - 52 miles from shore	(high use of tidal creeks and creek mouths)
	Juveniles	Over Continental Shelf from GOME to Cape Hatteras, NC; South of Cape Hatteras to Florida; also includes estuaries from Waquoit Bay to James R.; Albemarie Sound to Indian R.	>11	10 -30 Fresh in Narrag. Bay, Albem/ Pamlico Sound, & St. Johns R.	(0.5-5) in estuary		Demersal waters, muddy substrate but prefer mostly sand; found in the lower estuaries in flats, channels, salt marsh creeks, and eelgrass beds	HAPC - All native species of macroalgae, seagrasses and freshwater and tidal macrophytes in any size bed as well as loose aggregations, within adult and juvenile EFH. (Major prey: mysid shrimp)
	Adults	Over Continental Shelf from GOME to Cape Hatteras, NC; South of Cape Hatteras to Florida; also includes estuaries from Buzzards Bay, Narragansett Bay, Conn. R. to James R.; Albemarie Sound to Broad R.; St. Johns R., & Indian R.		Fresh in Albemarie Sound, Pamlico Sound, & St. Johns R.	(0 - 25)	Inhabit shallow coastal and estuarine waters during warmer months and move offshore on outer Continental Shelf at depths of 150m in colder months	Demersal waters and estuaries	HAPC - All native species of macroalgae, seagrasses and freshwater and tidal macrophytes in any size bed as well as loose aggregations, within adult and juvenile EFH. (Major prey: fish, shrimp, squid, polychaetes)
Surf clams	Juveniles	Eastern edge of GB and the GOME throughout Atlantic EEZ	(2-30)		0 -60 , low density beyond 38		Throughout substrate to a depth of three feet within federal waters. (Burrow in med. To coarse sand and gravel substrates. Also found in silty to fine sand, not in mud)	
	Adults	Eastern edge of GB and the GOME throughout Atlantic EEZ	(2-30)		0 -60 , low density beyond 38	(spawn-summer to fall at 19 - 30 °C)	Throughout substrate to a depth of three feet within federal waters	
Tilefish	Eggs	US Canadian Boundary to VA/NC boundary (shelf break; GB to Cape Hatteras)	8 - 19	(34 - 36)	76-365	(Serial spawning March - November; peaks April - October)	Water column	
	Larvae	US Canadian Boundary to VA/NC boundary Outer continental shelf; (GB to Cape Hatteras)	8 - 19	(33 - 35)	76-365	(Feb - Oct; peaks July - Oct)	Water column	

Species	Life Stage	Geographic Area	Temp (EC)	Salinity (‰)	Depth (m)	Seasonal Occurrence	Habitat Description	Comments
	Juveniles	US Canadian Boundary to VA/NC boundary (shelf break, submarine canyon walls and flanks; GB to Cape Hatteras)	8 - 18	(33 - 36)	76-365	(All year; may leave GB in winter)	Rough bottom, small burrows, and sheltered areas. (Substrate - rocky, stiff clay, human debris)	(Tilefish are shelter-seeking and habitat limited). HAPC is substrate between the 76 and 365m isobath, from U.S. / Canadian Boundary to the Virginia / North Carolina boundary within statistical areas 616 and 537 (intersection of isobaths east of Cape May, NJ and south of Provincetown, MA)
	Adults	US Canadian Boundary to VA/NC boundary (shelf break, submarine canyon walls and flanks; GB to Cape Hatteras)	8 - 18	(33 - 36)	76-365	(All year; may leave GB in winter)	Rough bottom, small burrows, and sheltered areas. (Substrate - rocky exposed ledges, stiff clay)	HAPC is substrate between the 250 and 1200 ft isobath, from U.S. / Canadian Boundary to the Virginia / North Carolina boundary within statistical areas 616 and 537 (intersection of isobaths east of Cape May, NJ and south of Provincetown, MA) (prey: crustaceans, fish, decapods, benthic epifauna)
Red drum	Larvae	Along the Atlantic coast from Virginia through the Florida Keys	2 - 33	Low salinity	<50		Estuarine wetlands especially important Flooded saltmarshes, brackish marsh, tidal creeks, mangrove fringe, seagrasses	Red drum are euryhaline
	Juveniles	Along the Atlantic coast from Virginia through the Florida Keys	2 - 33	20 - 40	<50	Found throughout Chesapeake Bay from Sept. - Nov.	Utilize shallow backwaters of estuaries as nursery areas and remain till they move to deeper water portions of the estuary associated with river mouths, oyster bars and front beaches	Red drum are eurythermal and larger juveniles and Adults more susceptible to effects of winter cold waves than small fish
	Adults	Along the Atlantic coast from Virginia through the Florida Keys	2 - 33	20 - 40	<50	Found in Chesapeake in Spring and Fall and also along Eastern Shore of VA	Concentrate around inlets, shoals, capes along the Atlantic coast - Shallow bay bottoms or oyster reef substrate preferred. Also nearshore artificial reefs.	HAPCs for red drum include all coastal inlets, all state-designated nursery habitats of particular importance to red drum (NC - all Primary and Secondary Nursery Areas), SAV extremely important, barrier islands in NC, SC, GA, FL and passes between barrier islands into estuaries
Spanish mackerel		South Atlantic and Mid-Atlantic Bights	>20	>30			Sandy shoals of capes and offshore bars, high profile rock bottoms and barrier island ocean side waters from surf zone to shelf break but from the Gulf Stream shoreward;	All coastal inlets
Cobia		South Atlantic and Mid-Atlantic Bights	>20	>25			Sandy shoals of capes and offshore bars, high profile rock bottoms and barrier island ocean side waters from surf zone to shelf break but from the Gulf Stream shoreward; high salinity bays, estuaries, seagrass habitat.	All coastal inlets
King mackerel		South Atlantic and Mid-Atlantic Bights	>20	>30			Sandy shoals of capes and offshore bars, high profile rock bottoms and barrier island ocean side waters from surf zone to shelf break but from the Gulf Stream shoreward;	All coastal inlets
Golden crab		Chesapeake Bay to the south through the Florida Straight (and into Gulf of Mexico)			290-570	(Gulf Stream EFH because it helps to disperse golden crab larvae)	Flat foraminifera ooze, distinct mounds of dead coral, ripple habitat, dunes, black pebble habitat, low outcrop, and soft bioturbated habitat	

